

**Southern Nuclear
Operating Company, Inc.**
Vogtle Electric Generating Plant
7821 River Road
Waynesboro, Georgia 30830
Tel 706.724.1562 or 706.554.9961



February 2, 2010

Docket Nos.: 50-424

NL-10-0042

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Vogtle Electric Generating Plant-Unit 1
Licensee Event Report 1-2009-002
Inadvertent Contact with Handswitch Results in an
Automatic Reactor Trip of Unit 1

Ladies and Gentlemen:

In accordance with the requirements of 10CFR50.73(a)(2)(iv)(A), Southern Nuclear Operating Company (SNC) is submitting the enclosed Licensee Event Report.

This letter contains no NRC commitments. If you have any questions, please advise.

Sincerely,

A handwritten signature in black ink, appearing to read "T. E. Tynan".

T. E. Tynan
Vice President – Vogtle

TET/TMH/sdc

Enclosure: LER 1-2009-002

cc: Southern Nuclear Operating Company
Mr. J. T. Gasser, Executive Vice President
Mr. T. E. Tynan, Vice President – Vogtle
Ms. P. M. Marino, Vice President – Engineering
RType: CVC7000

U. S. Nuclear Regulatory Commission
Mr. L. A. Reyes, Regional Administrator
Ms. D. N. Wright, NRR Project Manager – Vogtle
Mr. M. Cain, Senior Resident Inspector – Vogtle

Enclosure
Vogtle Electric Generating Plant-Unit 1
Licensee Event Report 1-2009-002
Inadvertent Contact with Handswitch Results in an
Automatic Reactor Trip of Unit 1

NRC FORM 366 (9-2007)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB: NO. 3150-0104 Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.		EXPIRES: 08/31/2010									
LICENSEE EVENT REPORT (LER)															
1. FACILITY NAME Vogtle Electric Generating Plant – Unit 1				2. DOCKET NUMBER 05000 424		3. PAGE 1 OF 4									
4. TITLE Inadvertent Contact with Handswitch Results in an Automatic Reactor Trip of Unit 1															
5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED						
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER					
12	07	09	2009	002	0	02	02	2010		05000					
									FACILITY NAME	DOCKET NUMBER					
										05000					
9. OPERATING MODE <div style="text-align: center; font-size: 1.5em;">1</div>			11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: <i>(Check all that apply)</i>												
10. POWER LEVEL <div style="text-align: center; font-size: 1.5em;">100</div>			<table style="width: 100%; border: none;"> <tr> <td style="width: 25%; vertical-align: top;"> <input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 20.2203(a)(2)(vi) </td> <td style="width: 25%; vertical-align: top;"> <input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.46(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(i)(A) <input type="checkbox"/> 50.73(a)(2)(i)(B) </td> <td style="width: 25%; vertical-align: top;"> <input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(iii) <input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> 50.73(a)(2)(v)(D) </td> <td style="width: 25%; vertical-align: top;"> <input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(ix)(A) <input type="checkbox"/> 50.73(a)(2)(x) <input type="checkbox"/> 73.71(a)(4) <input type="checkbox"/> 73.71(a)(5) <input type="checkbox"/> OTHER <div style="font-size: 0.8em;">Specify in Abstract below or in NRC Form 366A</div> </td> </tr> </table>									<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.46(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(i)(A) <input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(iii) <input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(ix)(A) <input type="checkbox"/> 50.73(a)(2)(x) <input type="checkbox"/> 73.71(a)(4) <input type="checkbox"/> 73.71(a)(5) <input type="checkbox"/> OTHER <div style="font-size: 0.8em;">Specify in Abstract below or in NRC Form 366A</div>
<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.46(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(i)(A) <input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(iii) <input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(ix)(A) <input type="checkbox"/> 50.73(a)(2)(x) <input type="checkbox"/> 73.71(a)(4) <input type="checkbox"/> 73.71(a)(5) <input type="checkbox"/> OTHER <div style="font-size: 0.8em;">Specify in Abstract below or in NRC Form 366A</div>												
12. LICENSEE CONTACT FOR THIS LER															
FACILITY NAME Vogtle Electric Generating Plant/Mark Hickox, Principal Licensing Engineer									TELEPHONE NUMBER (Include Area Code) (706) 826-4129						
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT															
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX						
14. SUPPLEMENTAL REPORT EXPECTED						15. EXPECTED SUBMISSION DATE									
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)						<input checked="" type="checkbox"/> NO									
						MONTH	DAY	YEAR							
ABSTRACT <i>(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)</i>															
<p>On December 7, 2009, at approximately 18:01 hours Eastern Standard Time (EST) with Unit 1 operating at 100 percent rated thermal power, an automatic turbine trip occurred due to low main condenser vacuum. In response to the turbine trip, the Reactor Protection System (RPS) actuated and automatically opened the reactor trip breakers. All control rods fully inserted into the core and all safety systems responded per design. Both Motor Driven Auxiliary Feedwater pumps and the Turbine Driven Auxiliary Feedwater pump started in accordance with plant design due to lo-lo steam generator water level in two steam generators. The unit was stabilized in Mode 3.</p> <p>The cause of the low condenser vacuum was determined to be inadvertent operation of a control room handswitch that resulted in a de-energization of a non-1E 480 volt switchgear. The loss of power to the non-1E 480 volt switchgear resulted in the defeat of an interlock on the loop seal drain valve for the standby Steam Jet Air Ejector (SJAЕ) which allowed the valve to open. Once the water in the loop seal had drained to the main condenser, a path between the condenser and the atmosphere was established and the main condenser vacuum started to decline. Approximately nine minutes elapsed from the time the handswitch was inadvertently opened until the low main condenser vacuum turbine trip setpoint was reached which resulted in the automatic turbine trip and subsequent automatic reactor trip.</p>															

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE		
Vogtle Electric Generating Plant-Unit 1	05000424	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2	OF	4
		2009	- 002	- 0			

NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

A. REQUIREMENT FOR REPORT

This report is required per 10CFR50.73(a)(2)(iv)(A) due to an unplanned automatic actuation of the Reactor Protection System (RPS) and an automatic actuation of the Auxiliary Feedwater System (AFW).

B. UNIT STATUS AT TIME OF EVENT

At the time of this event, Unit 1 was in Mode 1 (Power Operation) at 100% rated thermal power.

C. DESCRIPTION OF EVENT

On December 7, 2009, at approximately 17:52 hours EST, the control room handswitch for a breaker that feeds a non-1E 4160 /480 volt transformer from a 4160 volt bus was inadvertently opened. This resulted in a loss of power to several secondary side loads that were fed from the associated non-1E 480 volt bus. Due to the de-energization of the non-1E 480 volt bus, an interlock for the loop seal drain valve on the standby Steam Jet Air Extractor (SJAE) failed thereby allowing the valve to open. Once the water in the loop seal had drained to the main condenser, a path between the main condenser and the atmosphere was established, and the main condenser vacuum began to decline. At approximately 17:57 hours EST, the operators received a low condenser vacuum alarm and began executing an Annunciator Response Procedure (ARP) to try to restore condenser vacuum. The ARP instructs the operator to start the mechanical vacuum pumps. However, due to the de-energization of the non-1E 480 volt bus, the suction valves to the mechanical vacuum pumps had failed in the closed position. Since the operators were unable to draw a vacuum with the mechanical vacuum pumps due to the closed suction valves, they transitioned to an Abnormal Operating Procedure (AOP) to perform a rapid power reduction. However, prior to commencing the rapid power reduction, at approximately 18:01 hours EST, the turbine trip setpoint on low condenser vacuum was reached resulting in an automatic turbine trip. Since reactor power was above the P-9 permissive, the turbine trip satisfied the RPS logic. Consequently, a reactor trip signal was generated, and the reactor automatically tripped. Both motor driven AFW pumps and the turbine driven AFW pump started in accordance with plant design when two of the steam generators water level reached the lo-lo level setpoint. All control rods fully inserted, all safety systems functioned in accordance with the plant design upon receipt of the automatic reactor trip, and the plant was stabilized in Mode 3.

D. CAUSE OF EVENT

A root cause evaluation was performed, and it was determined that the only plausible cause for the event was a Control Room operator inadvertently contacting the handswitch for the feeder breaker to a non-1E 480 volt bus. The handswitch has both a mechanical flag that indicates the

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE	
Vogtle Electric Generating Plant-Unit 1	05000424	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3	OF 4
		2009	- 002	- 0		

NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

last position the handswitch was placed in and an amber light that illuminates if the breaker automatically trips open. Since the handswitch was found with the green flag present, indicating the switch had been placed in the Open position, the amber light was not illuminated, and there were no deficiencies found during testing of the removed breaker and handswitch, it was concluded that the handswitch had to have been moved to the Open position. The handswitch is located on a vertical panel in the control room. At approximately the same time the handswitch was opened, a Control Room operator was in routine transit to acknowledge an unrelated electrical trouble annunciator. Based upon the location of the handswitch and the path the operator would have taken to acknowledge the trouble annunciator, the root cause team concluded that some part of his body or clothing inadvertently contacted and moved the handswitch to the open position. The inadvertent contact caused the handswitch to change from the Closed to the Open position resulting in the de-energization of the non-1E 480 volt bus that provides power to several secondary side loads. The inadvertent operation of the handswitch was not recognized by the control room operator at the time of occurrence. Once the 480 volt bus was de-energized, the interlock that maintains the loop seal drain valve closed on the standby SJAE was defeated.

This circumstance resulted in the standby SJAE drain valve failing open, creating a flowpath between the main condenser and the outside environment. After the loop seal water had drained to the main condenser, main condenser vacuum started to decline and ultimately reached the low condenser vacuum turbine trip setpoint. This resulted in an automatic turbine trip and subsequent reactor trip.

E. ANALYSIS OF EVENT

As a result of the inadvertent contact with the control room handswitch, the feeder breaker that supplies power to several non-safety related secondary side loads de-energized. This caused an interlock that maintains the loop seal drain valve on the standby SJAE to be defeated. Once the water had drained from the loop seal, a flowpath from the outside environment to the main condenser was established resulting in a decrease in condenser vacuum. Approximately nine minutes after the handswitch was inadvertently contacted, the low condenser vacuum turbine trip setpoint was reached, which caused the turbine to trip. The RPS is designed to generate a reactor trip signal due to a turbine trip when the reactor is operating above the P-9 permissive. When the low condenser vacuum turbine trip setpoint was reached and the turbine tripped, the RPS functioned as designed to trip the reactor. All control rods fully inserted, all safety systems responded in accordance with the plant design, and the plant was stabilized in Mode 3. Based upon these considerations, there were no adverse affects on plant safety or on the health and safety of the public.

This event did not involve a safety system functional failure.

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Vogtle Electric Generating Plant-Unit 1	05000424	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 4
		2009	- 002	- 0	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

F. CORRECTIVE ACTIONS

1. A Standing Order was issued to increase the awareness of the plant operators to the potential risks associated with performing routine activities in the vicinity of vertical panels in the control room.
2. All plant personnel were briefed on this event. The briefing emphasized the use of the human performance error prevention tool - Situational Awareness.
3. A design change was implemented to remove the handles from selected handswitches on vertical panels in the control room. This will minimize the possibility of a handswitch being inadvertently contacted and changing position. The design change evaluated the increased operator action time that would be required to manipulate the selected switches and determined that there would not be any adverse affects.

G. ADDITIONAL INFORMATION

1. Failed Components: None. There were no failed components that directly contributed to this event. The 4160 volt feeder breaker and its handswitch that supplied power to the non-1E 480 volt bus were removed, inspected, and tested. No abnormalities were found with either component.
2. Previous Similar Event: A review of Licensee Event Reports for the past 3 years did not identify a similar event (i.e., where loss of condenser vacuum, led to an automatic reactor trip).
3. Energy Industry Identification System Codes:
Low Voltage Power Systems – EC
Condenser Vacuum System –SH
Auxiliary Feedwater System-BA